[Claim(s)]

[Claim 1]
In a manufacturing method of a non-oriented film which carries out heat melting of the thermoplastics, breathes out from a T die for extrusion, and extrudes and produces a film on a casting roll, Heat melting of another thermoplastics other than thermoplastics aiming at producing a film as a non-oriented film and this thermoplastics is carried out separately, Breathe out so that the another aforementioned thermoplastics may be led to both ends of a T die for extrusion and the another aforementioned thermoplastics may coexist on both sides of the aforementioned thermoplastics which carried out heat melting, and it extrudes on a casting roll, A manufacturing method of a non-oriented film carrying out cutting removal of the another aforementioned thermoplastics portion after producing a film to a non-oriented film in which the another aforementioned thermoplastics coexists on both sides of the aforementioned thermoplastics.
[Claim 2]
Heat melting of the aforementioned thermoplastics and the another aforementioned thermoplastics is carried out with a respectively separate extrusion machine, A hole is drilled in both sides of the lower part of a pipe which supplies a pipe for melting resin supply formed successively by each extrusion machine, and supplies the aforementioned thermoplastics, The aforementioned thermoplastics which carried out heat melting to a feed block which forms successively ends of the another aforementioned pipe which carries out thermoplastics supply to a hole drilled in these both sides, and the another aforementioned thermoplastics are supplied, Subsequently, it widens by a manifold formed successively by the aforementioned feed block, A manufacturing method of the non-oriented film according to claim 1 extruding on a casting roll from a die lip of said T die for extrusion in the state where the another aforementioned thermoplastics coexists on both sides of the aforementioned thermoplastics.
[Claim 3]
A manufacturing method of the non-oriented film according to claim 1 or 2, wherein a section of the lower part of the aforementioned pipe which supplies the aforementioned thermoplastics is a rectangle in said feed block and a section of the aforementioned hole drilled in both sides of the lower part of the aforementioned pipe is a rectangle.
[Claim 4]
When carrying out the regurgitation of the aforementioned thermoplastics and the another aforementioned thermoplastics from the aforementioned T die for extrusion, A manufacturing method of the non-oriented film according to any one of claims 1 to 3 producing the another aforementioned thermoplastics to the aforementioned non-oriented film so that it may become only a portion which becomes thick unescapable rather than thickness of the aforementioned thermoplastics.
[Claim 5]
A manufacturing method of the non-oriented film according to any one of claims 1 to 4 with which a difference of melt viscosity of the aforementioned thermoplastics and the another aforementioned thermoplastics is characterized by being 3000 P or less at a shear rate of 20 to 500 second -1.
[Claim 6]
A manufacturing method of the non-oriented film according to any one of claims 1 to 5 using colored thermoplastics as the another aforementioned thermoplastics.
[Claim 7]
In a manufacturing method of a resin coating metal plate which carries out heat melting of the thermoplastics, breathes out from a T die for extrusion, and extrudes and carries out lamination covering on a metal plate, Heat melting of another thermoplastics other than thermoplastics aiming at carrying out lamination covering and this thermoplastics is separately

carried out to a metal plate, Lead the another aforementioned thermoplastics to both ends of a T die for extrusion, and it ****s on both sides of the aforementioned thermoplastics which carried out heat melting, And as width of a portion of the aforementioned thermoplastics becomes larger than width of the aforementioned metal plate, it breathes out, and it extrudes on a front account metal plate, A manufacturing method of a resin coating metal plate carrying out cutting removal of the resin part overflowing into the both-ends exterior of the aforementioned metal plate after only a portion of the aforementioned thermoplastics uses the aforementioned metal plate with a resin coating metal plate by which lamination covering was carried out.

[Claim 8]

When carrying out the regurgitation of the aforementioned thermoplastics and the another aforementioned thermoplastics from the aforementioned T die for extrusion, A manufacturing method of the resin coating metal plate according to claim 7 extruding the another aforementioned thermoplastics which makes both sides of the aforementioned thermoplastics coexist on the aforementioned metal plate rather than thickness of the aforementioned thermoplastics as it becomes only a portion which becomes thick unescapable.

[Claim 9]

A manufacturing method of the resin coating metal plate according to claim 7 or 8 with which a difference of melt viscosity of the aforementioned thermoplastics and the another aforementioned thermoplastics is characterized by being 3000 P or less at a shear rate of 20 to 500 second -1.

[Claim 10]

A manufacturing method of the resin coating metal plate according to any one of claims 7 to 9 using colored thermoplastics as the another aforementioned thermoplastics.

[Claim 11]

A manufacturing installation of a non-oriented film characterized by comprising the following which has a feed block and the die lip connected with a manifold and said manifold, and consists of a T die which the aforementioned feed block comes to form successively.

An extrusion machine which carries out heat melting of the thermoplastics aiming at producing a film as a non-oriented film (A1).

An extrusion machine which carries out heat melting of another thermoplastics other than the aforementioned thermoplastics (B1).

A pipe for melting resin supply formed successively by extrusion machine (A1) (A2).

Two holes which are drilled in both sides of the lower part of a pipe for melting resin supply (B-2) formed successively by extrusion machine (B1), and a pipe for the aforementioned melting resin supply (A2), and a pipe for the aforementioned melting resin supply (B-2) comes to form successively.

[Claim 12]

A manufacturing installation of the non-oriented film according to claim 11, wherein a section of the lower part of the aforementioned pipe which supplies the aforementioned thermoplastics is a rectangle in said feed block and a section of the aforementioned hole drilled in both sides of the lower part of the aforementioned pipe is a rectangle.

[Detailed Description of the Invention]

[Field of the Invention]

[0001]

This invention relates to the manufacturing method of the non-oriented film which consists of thermoplastics, the manufacturing method of the fat cladding which carried out lamination covering of the thermoplastics, and the manufacturing installation of the non-oriented film which consists of thermoplastics.

[Background of the Invention]

[0002]

The non-oriented film which breathes out the resin which carried out heat melting within the extrusion machine from a T die as a film which consists of thermoplastics, is extruded on a casting roll, and is rolled round and used for a coiled form as it is, After extruding on a casting roll, the uniaxial stretched film which carries out a stretching process to a longitudinal direction, or the biaxially oriented film which carries out a stretching process a longitudinal direction and crosswise is produced. The film which was breathed out from the T die and extruded on the casting roll also in which these films, Since the both ends are solidified and produced on a casting roll as the characteristic of hyperviscous melting resin more thickly than the central part, in order to consider it as the film which has fixed thickness crosswise, cutting removal of the both ends is carried out. When producing the film of the same resin composition in large quantities, since heat melting of the resin of the thick portion by which cutting removal was carried out is carried out and it is again reused within an extrusion machine as a raw material of a film, do not become futility, but. When producing the film from which resin composition differs with a small-quantity [every] various kind, in order to use again the thick portion by which cutting removal was carried out as a raw material of a film, only when producing the film again, it can be used, but has become a neck of the improvement in the yield.

[0003]

As a method of removing the both ends of the cross direction of a resin film, the trimming method given in the patent documents 1 is proposed, for example. When this method extrudes and covers melting resin to both sides of the substrate of a metal plate, before resin cools the resin part (handle part) overflowing from the cross direction of the metal plate, with an endless guide belt, it is inserted, is lengthened, and is the method of turning off and removing 1000. In the use of this method, since resin is made to contain various kinds of paints and fillers and it uses for it, it is applicable only to the limited use, using again the portion by which cutting removal was carried out as a raw material of a film, and when producing the film produced with a small-quantity [every] various kind, the improvement in the yield cannot be expected.

[0004]

As a method of reducing the economic loss of the film trimming waste which cannot carry out a reuse, the method given in the patent documents 2 is proposed. This method is a thing about a film like the electric insulation film which consists of a biaxial stretched polypropylene film used for capacitor manufacture which has high quality requirements, When carrying out heat melting of the propylene polymer B within the 1st extrusion machine, carrying out heat melting of the propylene polymer A in the 2nd extrusion machine and extruding from both flat sheet dies, After supplying, extruding and carrying out the biaxial stretching process of the propylene polymer A to the both sides of the propylene polymer B, by carrying out cutting removal of the propylene polymer A of the both sides of the propylene polymer B, It is the method of making it not produce the waste as film trimming, using as effectively as possible the propylene polymer B which has high quality requirements. However, in this method, the characteristics, such as a molecular weight of the propylene polymer B, a remains ash, a melt index, and the melting point, are received, The characteristic of the propylene polymer B to be used must be set up suit these characteristics of the propylene polymer A, a use is limited, and it cannot apply to film production of general-purpose various thermoplastics.

[0005]

Some are following as information on prior art documents about this application.

[Patent documents 1] JP,2002-127099,A

[Patent documents 2] JP,08-336884,A

[Description of the Invention]

[Problem(s) to be Solved by the Invention]

[0006]
A manufacturing method of the non-oriented film which consists of thermoplastics which produces a small amount of this inventions with a various kind, It aims at providing the method of manufacturing by the manufacture high yield of the non-oriented film which consists of thermoplastics produced with the manufacturing method and small-quantity various kind of the resin coating metal plate which covers the thermoplastics produced with a various kind in small quantities.
[Means for Solving the Problem]
[0007]
A manufacturing method of a non-oriented film of this invention which solves an aforementioned problem, In a manufacturing method of a non-oriented film which carries out heat melting of the thermoplastics, breathes out from a T die for extrusion, and extrudes and produces a film on a casting roll, Heat melting of another thermoplastics other than thermoplastics aiming at producing a film as a non-oriented film and this thermoplastics is carried out separately, Breathe out so that the another aforementioned thermoplastics may be led to both ends of a T die for extrusion and the another aforementioned thermoplastics may coexist on both sides of the aforementioned thermoplastics which carried out heat melting, and it extrudes on a casting roll, After producing a film to a non-oriented film in which the another aforementioned thermoplastics coexists on both sides of the aforementioned thermoplastics, it is a manufacturing method (claim 1) of a non-oriented film carrying out cutting removal of the another aforementioned thermoplastics portion,
In a manufacturing method of a non-oriented film of the above (claim 1), heat melting of the aforementioned thermoplastics and the another aforementioned thermoplastics is carried out with a respectively separate extrusion machine, A hole is drilled in both sides of the lower part of a pipe which supplies a pipe for melting resin supply formed successively by each extrusion machine, and supplies the aforementioned thermoplastics, The aforementioned thermoplastics which carried out heat melting to a feed block which forms successively ends of the another aforementioned pipe which carries out thermoplastics supply to a hole drilled in these both sides, and the another aforementioned thermoplastics are supplied, subsequently -- it widens by a manifold formed successively by the aforementioned feed block, and is characterized by extruding on a casting roll from a die lip of said T die for extrusion in the state where the another aforementioned thermoplastics coexists on both sides of the aforementioned thermoplastics (claim 2) -- moreover
On a manufacturing method of a non-oriented film of the above (claim 1 or 2), and in said feed block, it is characterized by a section of the lower part of the aforementioned pipe which supplies the aforementioned thermoplastics being a rectangle, and a section of the aforementioned hole drilled in both sides of the lower part of the aforementioned pipe being a rectangle (claim 3) -- further -- again
In a manufacturing method of a non-oriented film of the above (claims 1-3), when carrying out the regurgitation of the aforementioned thermoplastics and the another aforementioned thermoplastics from the aforementioned T die for extrusion, it is characterized by producing the another aforementioned thermoplastics to the aforementioned non-oriented film so that it may become only a portion which becomes thick unescapable rather than thickness of the aforementioned thermoplastics (claim 4) -- further -- again
in a manufacturing method of a non-oriented film of the above (claims 1-4), a difference of melt viscosity of the aforementioned thermoplastics and the another aforementioned thermoplastics is characterized by being 3000 P or less (claim 5) at a shear rate of 20 to 500 second -1 -- further -- again
In a manufacturing method of a non-oriented film of the above (claims 1-5), colored thermoplastics is used as the another aforementioned thermoplastics (claim 6).
[0008]

A manufacturing method of a resin coating metal plate of this invention, In a manufacturing method of a resin coating metal plate which carries out heat melting of the thermoplastics, breathes out from a T die for extrusion, and extrudes and carries out lamination covering on a metal plate, Heat melting of another thermoplastics other than thermoplastics aiming at carrying out lamination covering and this thermoplastics is separately carried out to a metal plate, Lead the another aforementioned thermoplastics to both ends of a T die for extrusion, and it ****s on both sides of the aforementioned thermoplastics which carried out heat melting, And as width of a portion of the aforementioned thermoplastics becomes larger than width of the aforementioned metal plate, it breathes out, and it extrudes on a front account metal plate, After only a portion of the aforementioned thermoplastics uses the aforementioned metal plate with a resin coating metal plate by which lamination covering was carried out, it is a manufacturing method (claim 7) of a resin coating metal plate carrying out cutting removal of the resin part overflowing into the both-ends exterior of the aforementioned metal plate,

In a manufacturing method of a resin coating metal plate of the above (claim 7), when carrying out the regurgitation of the aforementioned thermoplastics and the another aforementioned thermoplastics from the aforementioned T die for extrusion, it is characterized by extruding the another aforementioned thermoplastics which makes both sides of the aforementioned thermoplastics coexist on the aforementioned metal plate rather than thickness of the aforementioned thermoplastics, as it becomes only a portion which becomes thick unescapable (claim 8) -- moreover

in a manufacturing method of a resin coating metal plate of the above (claim 7 or 8), a difference of melt viscosity of the aforementioned thermoplastics and the another aforementioned thermoplastics is characterized by being 3000 P or less (claim 9) at a shear rate of 20 to 500 second -1 -- further -- again

In a manufacturing method of a resin coating metal plate of the above (claims 7-9), colored thermoplastics is used as the another aforementioned thermoplastics (claim 10).

[0009]

A manufacturing installation of a non-oriented film of this invention, An extrusion machine (A1) which carries out heat melting of the thermoplastics aiming at producing a film as a non-oriented film, An extrusion machine (B1) which carries out heat melting of another thermoplastics other than the aforementioned thermoplastics, A pipe for melting resin supply (A2) formed successively by extrusion machine (A1), and a pipe for melting resin supply (B-2) formed successively by extrusion machine (B1), A feed block which consists of two holes which are drilled in both sides of the lower part of a pipe for the aforementioned melting resin supply (A2), and a pipe for the aforementioned melting resin supply (B-2) comes to form successively, It is a manufacturing installation (claim 11) of a non-oriented film which consists of a T die which has the die lip connected with a manifold and said manifold, and the aforementioned feed block comes to form successively,

In a manufacturing method of a non-oriented film of the above (claim 11), it is characterized by a section of the lower part of the aforementioned pipe which supplies the aforementioned thermoplastics being a rectangle, and a section of the aforementioned hole drilled in both sides of the lower part of the aforementioned pipe being a rectangle (claim 12) in said feed block.

[Effect of the Invention]

[0010]

In the manufacturing method of the non-oriented film which the manufacturing method of the non-oriented film of this invention carries out heat melting of the thermoplastics, breathes out from the T die for extrusion, and extrudes and produces a film on a casting roll, Heat melting of another thermoplastics other than thermoplastics aiming at producing a film as a non-oriented film and its thermoplastics is carried out separately, Breathe out so that the another aforementioned thermoplastics may be led to the both

ends of the T die for extrusion and another thermoplastics may coexist on both sides of carrying-out-heat melting thermoplastics, and it extrudes on a casting roll, After producing a film to the non-oriented film in which another thermoplastics coexists on both sides of target thermoplastics, Since the thermoplastics portion which carries out cutting removal of another thermoplastics portion produced thickly unescapable, and is made into the purpose is hardly cut from the target thermoplastics portion, The non-oriented film which consists of thermoplastics aiming at producing the film from which resin composition differs with a small-quantity [every] various kind can be manufactured by high yield.

[0011]
The manufacturing method of the resin coating metal plate of this invention, In the manufacturing method of the resin coating metal plate which carries out heat melting of the thermoplastics, breathes out from the T die for extrusion, and extrudes and carries out lamination covering on a metal plate, Heat melting of another thermoplastics other than thermoplastics aiming at carrying out lamination covering and this thermoplastics is separately carried out to a metal plate, It ****s on both sides of the thermoplastics which leads the another aforementioned thermoplastics to the both ends of the T die for extrusion, and is made into the purpose which carried out heat melting, And as the width of the portion of the thermoplastics becomes larger than the width of a metal plate, it breathes out, and it extrudes on a metal plate, After only the portion of target thermoplastics uses a metal plate with the resin coating metal plate by which lamination covering was carried out, Since the whole surface of a metal plate is covered without cutting most thermoplastics portions which carry out cutting removal of another thermoplastics portion produced thickly unescapable, and are made into the purpose from the thermoplastics portion made into the purpose overflowing into the both-ends exterior of the metal plate, A resin coating metal plate can be manufactured without losing most target thermoplastics.
[0012]
The manufacturing installation of the non-oriented film of this invention, The extrusion machine (A1) which carries out heat melting of the thermoplastics aiming at producing a film as a non-oriented film, The extrusion machine (B1) which carries out heat melting of another thermoplastics other than the thermoplastics, The pipe for melting resin supply (A2) formed successively by the extrusion machine (A1), and the pipe for melting resin supply (B-2) formed successively by the extrusion machine (B1), The feed block which consists of two holes which are drilled in the both sides of the lower part of the pipe for melting resin supply (A2), and the pipe for melting resin supply (B-2) comes to form successively, Have the die lip connected with the manifold and the manifold, and it comprises a T die which a feed block comes to form successively, When a film is produced as a non-oriented film made into the purpose using the manufacturing installation of the non-oriented film of this invention, Since the thermoplastics portion which carries out cutting removal of another thermoplastics portion produced thickly unescapable, and is made into the purpose is hardly cut from the thermoplastics portion made into the purpose after producing a film to the non-oriented film in which another thermoplastics coexists on both sides of target thermoplastics, The non-oriented film which consists of thermoplastics aiming at producing the film from which resin composition differs with a small-quantity [every] various kind can be manufactured by high yield.
[Best Mode of Carrying Out the Invention]
[0013]
Hereafter, this invention is explained in detail. The non-oriented film manufactured using the manufacturing method of this invention aims at producing the film from which resin composition differs with a small-quantity [every] various kind using a small number of manufacturing

installation. As resin which produces a film to the target non-oriented film, Low density polyethylene which is the polymer or copolymer of 1-alkene whose carbon number is 2-8 pieces, Medium density polyethylene, high density polyethylene, polypropylene, the polybutene 1, the polypentene- 1, the polyhexene- 1, the polyheptene- 1, the polyoctene- 1, ethylene propylene rubber, The polyolefin resin which consists of one sort, such as an ethylene-butene-1 copolymer and an ethylene-hexene copolymer, or two sorts or more, Polyamide resin, such as 6-nylon, 6,6-nylon, and six to 10 nylon, As an acid component, terephthalic acid, isophthalic acid, orthophthalic acid, P-beta-oxyethoxy benzoic acid, Naphthalene-2,6-dicarboxylic acid, diphenoxyethane-4,4-dicarboxylic acid, 2 basicity aromatic dicarboxylic acid, such as 5-sodium sulfoisophtharate, Alicycle fellows dicarboxylic acid, such as hexahydro terephthalic acid and cyclohexanedicarboxylic acid, Aliphatic dicarboxylic acid, such as adipic acid, sebacic acid, and dimer acid, trimellitic acid, pyromellitic acid, hemi limit acid, 1,1,2,2-ethanetetracarboxylic acid, 1,1,2-ethane tricarboxylic acid, 1,3,5-pentane tricarboxylic acid, The acid which consists of either [of polybasic acid, such as 1,2,3,4-cyclopentane tetracarboxylic acid and biphenyl 3,4,3',4'-cyclopentane tetracarboxylic acid] one sort or two sorts or more, As an alcohol component, ethylene glycol, propylene glycol, 1,4-butanediol, neopentyl glycol, 1,6-hexylene glycol, Diol, such as a diethylene glycol, triethylene glycol, and cyclohexane dimethanol. Pentaerythritol, glycerol, trimethylolpropane, 1,2,6-hexanetriol, The polyester resin which consists of one sort or the alcohol which consists of either two or more sorts of polyhydric alcohol, such as sorbitol and 1,1,4,4-tetrakis (hydroxymethyl) cyclohexane, can be used.

Since the melt viscosity of thermoplastics with another thermoplastics made into the thermoplastics made into the purpose and the purpose is adjusted and a film is produced on a film in this invention so that a postscript may be carried out, Both resin composition in particular is not asked, and the thermoplastics made into the purpose of making the thermoplastics and the both ends of the above-mentioned resin aiming at all coexisting can be combined as another thermoplastics, and it can use it.

[0014]

Next, how to produce a film so that another thermoplastics may coexist to the both ends of the thermoplastics made into the purpose using the manufacturing method and manufacturing installation of a non-oriented film of this invention is explained. Drawing 1 is a schematic diagram of the manufacturing installation 10 of the non-oriented film of this invention. Heat melting of the target thermoplastics A is carried out with the extrusion machine A1, and it is supplied to the feed block 1 through the pipe A2 for melting resin supply of the thermoplastics A made into the purpose formed successively by the extrusion machine A1. Heat melting of another thermoplastics B which makes the both ends of the thermoplastics A coexist is carried out with the extrusion machine B1, it is formed successively by the extrusion machine B1, and is supplied to the feed block 1 through pipe B-2 for melting resin supply of the two thermoplastics B which branched on the way. To the feed block 1, the pipe A2 for melting resin supply of the thermoplastics A penetrates, and it is formed successively by T die 2 at the bottom. The hole B3a and the hole B3b are drilled in the both sides of the lower part of the pipe A2 for melting resin supply of the thermoplastics A in the feed block 1, and to those holes B3a and holes B3b, pipe B-2 for melting resin supply of the thermoplastics B penetrates the inside of the feed block 1, respectively, and are formed successively.

[0015]

The thermoplastics A by which heat melting was carried out with the extrusion machine A1 is supplied to the feed block 1 through the pipe A2 for melting resin supply, and is extruded towards T die 2 connected by the bottom. The thermoplastics B by which heat melting was carried out with the extrusion machine B1. The feed block 1 is supplied through pipe B-2 for

melting resin supply, it extrudes in the pipe A2 for melting resin supply from the hole B3a and the hole B3b which were drilled in the both sides of the lower part of the pipe A2 for melting resin supply, and the thermoplastics B comes to coexist to the both ends of the thermoplastics A. Subsequently, it is widened by the manifold 6 provided in T-die 2 inside, and is breathed out on the casting roll 4 allocated under T die 2 from the die lip 3. The both ends of the cross direction of the resin film of the molten state breathed out at this time become thicker than other portions unescapable. Therefore, a film is produced as the non-oriented film 20 in which the thermoplastics B with thick thickness coexists from the thermoplastics A to the both ends of the thermoplastics A.

[0016]

In [when the pipe A2 for melting resin supply and pipe B-2 for melting resin supply are used as the pipe of a circle section from the ease of processing at the time of manufacture, respectively] the bottom of the pipe A2 for the melting resin supply in front of T die 2, According to the viscosity difference of the thermoplastics A and the thermoplastics B, it comes to **** in the both ends of the thermoplastics A with sectional shape as the thermoplastics B shows to drawing 2 - drawing 4. The state of the thermoplastics A just before drawing 2 - drawing 4 extrude melting resin to T die 2 from the hole B3a and the hole B3b which were drilled in the both sides of the lower part of the pipe A2 for the melting resin supply in the feed block 1, and the pipe A2 for melting resin supply, and the thermoplastics B, And it is a mimetic diagram showing the state where breathed out from T die 2 and the film was produced to the non-oriented film, The lower part of the sectional view showing the state of the thermoplastics A in the lower part of the pipe A2 for melting resin supply in the upper part of a figure and the thermoplastics B and a figure shows the state of the section of the non-oriented film after the film was breathed out and produced from T die 2.

[0017]

When the melt viscosity of the target thermoplastics A is extremely larger than the melt viscosity of another thermoplastics B, If the thermoplastics B comes to coexist to the both ends of the thermoplastics A with the sectional shape shown in the upper part of drawing 2, widens to them by the manifold 6 in this state and carries out the regurgitation to them from the die lip 3 of T die 2, As shown in the lower part of drawing 2, what is called the lap part 5 into which the thermoplastics B entered is formed in the upper and lower sides of the end of the thermoplastics A.

[0018]

When the melt viscosity of the target thermoplastics A is extremely smaller than the melt viscosity of another thermoplastics B, If the thermoplastics B comes to coexist to the both ends of the thermoplastics A with the sectional shape shown in the upper part of drawing 3, widens to them by the manifold 6 in this state and carries out the regurgitation to them from the die lip 3 of T die 2, As shown in the lower part of drawing 3, the lap part 5 into which the thermoplastics B entered is formed in the upper and lower sides of the end of the thermoplastics A.

[0019]

Since these lap parts 5 are not employable as a product in the portion which the thermoplastics A and the thermoplastics B overlapped, it must remove, but when the lap part 5 is large, a removal section will increase, and the yield of the thermoplastics A made into the purpose will fall. In order to make the lap part 5 easy to check, it is preferred to make it contain, to make it color and to use colored paints for another thermoplastics B. When the thermoplastics A is coloring resin, it is preferred to use as transparent resin which makes the thermoplastics B contain the colored paints of a different color from the color of the thermoplastics A, or does not make paints contain.

[0020]

In [in order to control the lap part of this thermoplastics A and the

thermoplastics B to the minimum] this invention, From the difference of the melt viscosity of both at the time of the thermoplastics B other than the target thermoplastics A passing a feed block and a T die being 3000 P or less at the shear rate of 20 to 500 second -1. If the thermoplastics B comes to coexist to the both ends of the thermoplastics A with the sectional shape shown in the upper part of drawing 4, widens to them by the manifold 6 in this state and carries out the regurgitation to them from the die lip 3 of T die 2, A film can be produced without making most lap parts form, as shown in the lower part of drawing 4. In order to make the difference of melt viscosity into the above-mentioned range, a heater and a thermo sensor are formed around the manifold 6 of the pipe A2 for melting resin supply, pipe B-2 for melting resin supply, the feed block 1, and T die 2, The difference of melt viscosity can be adjusted to 3000 P or less at the shear rate of 20 to 500 second -1 by adjusting cooking temperature using a temperature control means, heating resin with higher melt viscosity to an elevated temperature, and heating resin with lower melt viscosity at low temperature.

[0021]

When the difference of the melt viscosity of the thermoplastics A and the thermoplastics B is adjusted to 3000 P or less at the shear rate of 20 to 500 second -1 as mentioned above, The melt viscosity of the thermoplastics A is larger than the melt viscosity of the thermoplastics B, And when the thermoplastics A is breathed out from the die lip 3 of T die 2 and it is the resin that resin pulsates and film width is changed sharply periodically, If melt viscosity makes the large thermoplastics B coexist from the thermoplastics A to the both ends of the thermoplastics A, pulsation of thermoplastics will be controlled and change of film width will become small. Therefore, a film can be produced rather than the case where a resin film is produced using the thermoplastics A, at high speed.

[0022]

The portion A2R hung on a terminal area with the T die of the pipe A2 bottom from the right above [the hole B3a and the hole B3b] part which pipe B-2 for melting resin supply of the thermoplastics B of the both sides of the pipe A2 for melting resin supply of the thermoplastics A in the feed block 1 joins as shown in drawing 5, And by making into a rectangular cross section the section of partial B3aR in front of each of the hole B3a of pipe B-2, and the hole B3b, and B3bR (portion shown by hatching, respectively), It becomes easy to make shape with which the thermoplastics B coexists to the both ends of the thermoplastics A before widening by the manifold in a T die into the sectional shape (A2R) shown in the drawing 6 upper part. Therefore, if it widens by the manifold 6 in this state and the regurgitation is carried out from the die lip 3 of T die 2, a film can be produced, without making most lap parts form, as shown in the lower part of drawing 6.

[0023]

Next, the manufacturing method of the resin coating metal plate of this invention is explained. Drawing 7 is an outline top view showing the case where the case where lamination covering is extruded and carried out from the die lip 3 of T die 1 on the metal plate 30 which runs continuously toward the bottom from a top on a figure as the thermoplastics B coexists to the both ends of the thermoplastics A is seen from the upper part of a metal plate. As T die 1, the discharge width of the die lip 3 uses the T die which is size from the width of the metal plate 30. It fabricates by the same operation as manufacture of the non-oriented film of above-mentioned this invention on the film of a molten state until it carries out the regurgitation of the thermoplastics A and the thermoplastics B from the die lip 3 of T die 1. And the thermoplastics B thickly produced by the both sides of the thermoplastics A unescapable from the thermoplastics A coexists, and as the width of the portion of the thermoplastics A becomes larger than the width of the metal plate 30, it breathes out on the metal plate 30, and lamination covering of the metal plate 30 is carried out. The hatching portions of a figure show the portion by which lamination covering of the metal plate 30 was carried out with the thermoplastics A. Thus, after

carrying out lamination covering of the metal plate 30 top only in the portion of the thermoplastics A and considering it as the resin coating metal plate 40, cutting removal of the portion overflowing into the both-ends exterior of the metal plate 30 of the thermoplastics B and the thermoplastics A is carried out using the cutting means 15, such as a cutter. Thus, it carries out and lamination covering of the overall width of the metal plate 30 is carried out with the thermoplastics A made into the purpose of uniform thickness. A resin coating metal plate can be manufactured without almost losing the target thermoplastics A by controlling the extrusion outlet of the thermoplastics A so that the portion of the thermoplastics A overflowing into the both-ends exterior of the metal plate 30 may serve as the minimum.

[Example]

[0024]

Hereafter, an example is shown and this invention is explained still in detail.

(Example 1)

as the thermoplastics A aiming at producing a film to a non-oriented film -- polyester resin (ethylene terephthalate / ethylene isophthalate copolymer (ethylene isophthalate 10 mol %).) Melting point : Are 260 ** in 220 ** and temperature, and the melt viscosity:7500 P in shear rate 100-second -1 is heated and fused at 260 ** using the extrusion machine A1, As the thermoplastics B which makes the both ends of the thermoplastics A coexist, in polyethylene (melting point: 145 **). The resin (temperature of 200 ** and melt viscosity in shear rate 100-second -1 : 4500 P) which added TiO2 25% of the weight as a coloring component was heated and fused at 200 ** using the extrusion machine B1. . Subsequently, pass the one pipe A2 for melting resin supply which heated the thermoplastics A which carried out heat melting from the extrusion machine A1 at 260 ** with the adjoining heater. The thermoplastics B which carried out heat melting was supplied to the feed block 1 through two pipe B-2s for melting resin supply heated at 200 **, respectively with the adjoining heater from the extrusion machine B1. In the center of the inside of the feed block 1, the pipe A2 for melting resin supply has penetrated, The thermoplastics B is extruded in the pipe A2 for melting resin supply from the hole B3a and the hole B3b which were formed successively and drilled in the both sides of the lower part by pipe B-2 for melting resin supply, and the thermoplastics B was made to **** to the both ends of the thermoplastics A. Subsequently, the width of the portion of the thermoplastics A after film production widens by about 80 cm and the manifold 6 provided in T-die 2 inside so that the width of the portion of the thermoplastics B of the both ends of the thermoplastics A might be set to about 10 cm, respectively, It was made to fall on the casting roll (cooling roller) 4 which rotates continuously from the die lip 3 allocated under T die 2, cooling solidification was carried out, and the film was produced to the resin film about 1 m wide. The melt viscosity in resin temperature [in front of the feed block 2] and shear rate 100-second -1 was A:260 ** of thermoplastics, about 6500 P, B (TiO2 addition):200 ** of thermoplastics, and about 5000 P. Thus, the lap part 5 which the thermoplastics A and the thermoplastics B overlap in the film which produced the film was hardly formed. Therefore, the cutter was used for both sides in a 39-cm position from the center of the resin film, cutting removal of the both ends of a film was carried out, and it rolled round to the coiler as a non-stretched resin film with a width of 78 cm which consists of the thermoplastics A.

[0025]

(Example 2)

as the thermoplastics A -- polyester resin (ethylene terephthalate / ethylene isophthalate copolymer (ethylene isophthalate 15 mol %).) Melting point : Are 260 ** in 215 ** and temperature, and the melt viscosity:6000 P in shear rate 100-second -1 is heated and fused at 260 ** using the extrusion machine A1, As the thermoplastics B, using the extrusion machine

B1, the resin (temperature of 200 ** and melt viscosity in shear rate 100-second -1 : 4500 P) which added TiO2 20% of the weight as a coloring component was heated at 200 **, and was fused in polyethylene (melting point: 160 **). Subsequently, the width of the portion of the thermoplastics A after film production breathes out the thermoplastics A and the thermoplastics B like Example 1 except having made it the width of the portion of the thermoplastics B of the both ends of about 90 cm and the thermoplastics A set to about 5 cm, respectively, It was made to fall on the cooling roller 4, cooling solidification was carried out, and the film was produced to the resin film about 1 m wide. The melt viscosity in resin temperature [in front of the feed block 2] and shear rate 100-second -1 was A:260 ** of thermoplastics, about 5500 P, B (TiO2 addition):200 ** of thermoplastics, and about 4500 P. Thus, in the film which produced the film, the lap part 5 was hardly formed. Therefore, from the center of the resin film, the cutter was used for both sides for the both ends of the film in a 44-cm position, cutting removal was carried out, and it rolled round to the coiler as a non-stretched resin film with a width of 88 cm which consists of the thermoplastics A.

[0026]

(Comparative example 1)

as the thermoplastics A -- polyester resin (ethylene terephthalate / ethylene isophthalate copolymer (ethylene isophthalate 5 mol %.)) Melting point : Are 260 ** in 240 ** and temperature, and the melt viscosity:6000 P in shear rate 100-second -1 is heated and fused at 260 ** using the extrusion machine A1, As the thermoplastics B, using the extrusion machine B1, the resin (temperature of 200 ** and melt viscosity in shear rate 100-second -1 : 4000 P) which added TiO2 20% of the weight as a coloring component was heated at 200 **, and was fused in polyethylene (melting point: 140 **). Subsequently, the width of the portion of the thermoplastics A after film production breathes out the thermoplastics A and the thermoplastics B like Example 1 except having made it the width of the portion of the thermoplastics B of the both ends of about 80 cm and the thermoplastics A set to about 10 cm, respectively, It was made to fall on the cooling roller 4, cooling solidification was carried out, and the film was produced to the resin film about 1 m wide. The melt viscosity in resin temperature [in front of the feed block 2] and shear rate 100-second -1 was A:260 ** of thermoplastics, about 7500 P, B (TiO2 addition):200 ** of thermoplastics, and about 3500 P. Thus, in the film which produced the film, the lap part 5 into which the thermoplastics B entered was formed in the upper and lower sides of the end of the thermoplastics A as shown in drawing 3. Therefore, since cutting removal of the resin of the both ends of the thermoplastics A had to be carried out including the lap portion and cutting removal of the both ends of a film was carried out in a 30-cm position from the center of the resin film at both sides, the non-stretched resin film which consists of the thermoplastics A was able to be obtained at 60 cm only in width.

[0027]

(Comparative example 2)

The polyester resin used for Example 2 as the thermoplastics A is heated and fused at 265 ** using the extrusion machine A1, As the thermoplastics B, using the resin (temperature of 260 ** and melt viscosity in shear rate 100-second -1 : 9700 P) added 20% of the weight extrusion machine B1, as a coloring component, TiO2 was heated at 265 ** and fused to polyethylene terephthalate (melting point: 255 **). Subsequently, so that a film may be produced as a resin film in which the thermoplastics B (TiO2 addition) coexists to the both ends of the thermoplastics A after extruding from a T die, It is made for the width of the portion of the thermoplastics B of the both ends of about 80 cm and the thermoplastics A to be about 10 cm, respectively in the width of the portion of the thermoplastics A after film production, From the extrusion machine A1, it is made to be the same as that of Example 1 except having extruded from the feed block through the one pipe

A2 for melting resin supply heated at 260 **, and two branched pipe B-2s for melting resin supply heated at 260 ** from the extrusion machine B1, respectively with the adjoining heater. The thermoplastics A and the thermoplastics B were breathed out, it was made to fall on the cooling roller 4, cooling solidification was carried out, and the film was produced to the resin film about 1 m wide. The melt viscosity in resin temperature [in front of the feed block 2] and shear rate 100-second -1 was A:260 ** of thermoplastics, about 6000 P, B (TiO2 addition):260 ** of thermoplastics, and about 9500 P. Thus, in the film which produced the film, the lap part 5 to which the end of the thermoplastics A as shown in drawing 4 entered into the upper and lower sides of the thermoplastics B was formed. Therefore, since cutting removal of the resin of the both ends of the thermoplastics A had to be carried out including the lap portion and cutting removal of the both ends of a film was carried out in a 35-cm position from the center of the resin film at both sides, the non-stretched resin film which consists of the thermoplastics A was able to be obtained at 70 cm only in width.

[0028]

(Example 3)

In the film production device used for film production of the non-oriented film of Examples 1 and 2 and the comparative examples 1 and 2, Thickness which changes to the cooling roller 4, is unwound from an uncoiler as a metal plate, and is supplied continuously : 0.3 mm, Width : Carry out plate leaping of the 75-cm galvanized steel sheet, and heat melting of the same thermoplastics A and thermoplastics B as Example 1 is carried out like Example 1 on this galvanized steel sheet, Lamination covering was breathed out and carried out on the galvanized steel sheet from the die lip 3 allocated in them under T die 2 as the thermoplastics B coexisted to the both ends of the thermoplastics A. Thus, the overall width of the resin film in which the thermoplastics B coexists to the both ends of the breathed-out thermoplastics A whose width of the portion of the thermoplastics B of the both ends of about 80 cm and the thermoplastics A the width of the portion of the thermoplastics A is about 10 cm, respectively is about 1 m. Since some thermoplastics A and thermoplastics B all overflowed into the both ends of the cross direction of a galvanized steel sheet, it rolled round to the coiler as a resin coating galvanized steel sheet which carries out cutting removal of this overflowing resin part by a cutter and by which lamination covering of the whole surface on a galvanized steel sheet was carried out with the thermoplastics A.

[Industrial applicability]

[0029]

The non-oriented film which produced the film using the manufacturing method and manufacturing installation of a non-oriented film of this invention, Since the thermoplastics portion which carries out cutting removal of another resin part produced thickly unescapable, and is made into the purpose is hardly cut from the resin part made into the purpose after making another resin coexist to the both ends of target resin and producing a film to them, It becomes possible to manufacture the non-oriented film which consists of thermoplastics aiming at producing the film from which resin composition differs with a small-quantity [every] various kind by high yield, and it is cheap and the film from which resin composition differs can be produced with a small-quantity [every] various kind.

After only the portion of the thermoplastics made into the purpose uses as a metal plate the resin coating metal plate which produced the film using the manufacturing method of the resin coating metal plate of this invention with the resin coating metal plate by which lamination covering was carried out, Since the whole surface of a metal plate is covered without cutting most thermoplastics portions which carry out cutting removal of another thermoplastics portion produced thickly unescapable, and are made into the purpose from the thermoplastics portion made into the purpose overflowing into the both-ends exterior of the metal plate, Without losing most target

thermoplastics, it becomes possible to manufacture a resin coating metal plate, and it is cheap and the metal plate which covered the film from which resin composition differs can be produced with a small-quantity [every] various kind.

[Brief Description of the Drawings]

[0030]

[Drawing 1]The schematic diagram of the manufacturing installation of the non-oriented film of this invention.

[Drawing 2]The mimetic diagram showing the state of thermoplastics just before extruding to a T die, and the state where the film was produced on the film.

[Drawing 3]The mimetic diagram showing the state of thermoplastics just before extruding to a T die, and the state where the film was produced on the film.

[Drawing 4]The mimetic diagram showing the state of thermoplastics just before extruding to a T die, and the state where the film was produced on the film.

[Drawing 5]The outline sectional view showing the merging section of resin in a feed block.

[Drawing 6]The mimetic diagram showing the state of thermoplastics just before extruding to a T die, and the state where the film was produced on the film.

[Drawing 7]The outline top view showing the manufacturing method of the resin coating metal plate of this invention.

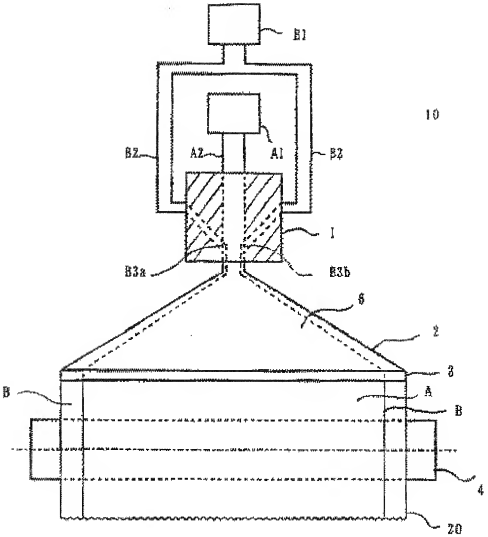
[Description of Notations]

[0031]

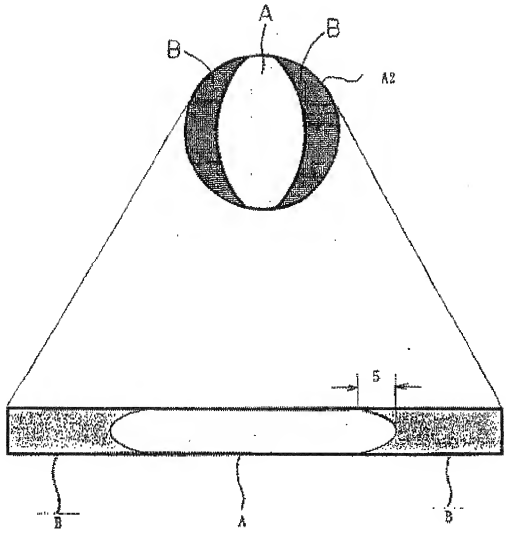
1 Feed block
2 T die
3 Die lip
4 Casting (cooling) roll
5 Lap part
6 Manifold
10 A manufacturing installation of a non-oriented film
15 Cutting means
20 Non-oriented film
30 Metal plate
40 Resin coating metal plate
A Thermoplastics
B Thermoplastics
A1 Extrusion machine
A2 Pipe for melting resin supply
A2R Terminal area with the T die of the pipe for melting resin supply
B1 Extrusion machine
B-2 Pipe for melting resin supply
B3a Hole
B3aR A part for the direct anterior part of the hole of the pipe for melting resin supply
B3b Hole
B3bR A part for the direct anterior part of the hole of the pipe for melting resin supply

DRAWINGS

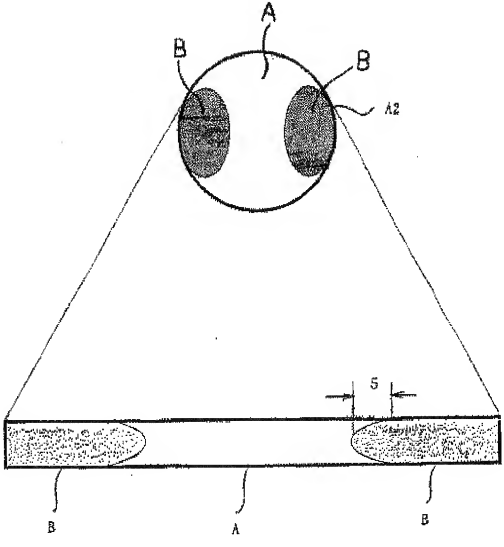
[Drawing 1]



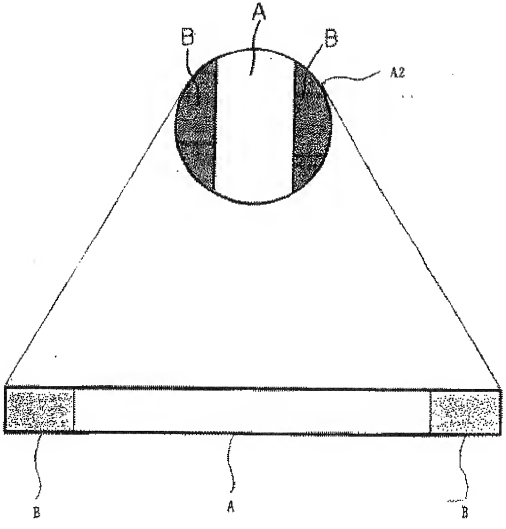
[Drawing 2]



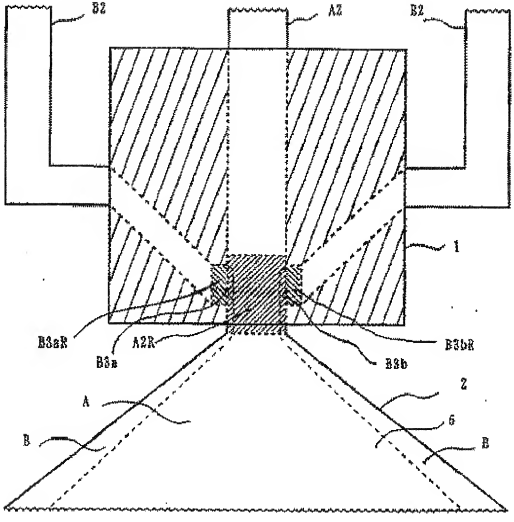
[Drawing 3]



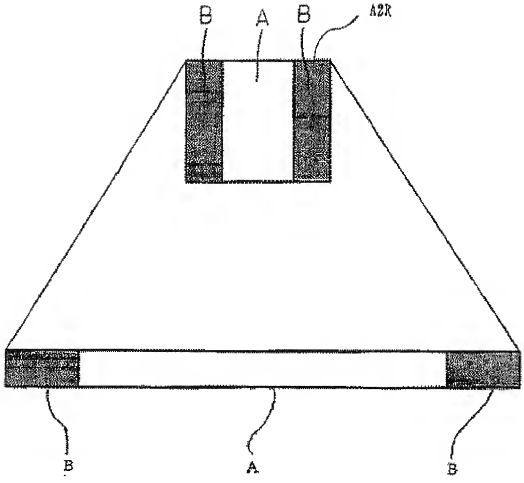
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Drawing 7]